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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,657

09/29/2003

Byung Soo Song

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10/19/2006

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EXAMINER

RAHMJOO, MANUCHER

ART UNIT

PAPER NUMBER

2628

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/671,657

Applicant(s)

SONG ET AL.

Examiner

Mike Rahmjoo

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4,5,9-11,28 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-5,9-11,28,31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 4 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 4 and 28 applicant recites the steps of detecting false contour regions, extracting motion information, compensating false contour, setting compensation value based on velocity, adding or subtracting compensation value and setting compensation value based on size of the gray scale. Said steps are merely descriptive material without reaching a final result as being useful, concrete and tangible.

Claims 4 and 28 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5,9-11 and 28, 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mikoshiba et al (US Patent 6496194), hereinafter, Mikoshiba in view of Okomoto et al (publication number 2001- 083926).

As per claims 4 and 28 Mikoshiba teaches detecting each false contour generation regions from first video data for a previous frame period and a second video data for a current frame period see for example fig. 15 to 18 B and column 15 lines 60-67 for the false contour compensation between two successive frames corresponding to first and second video data; extracting a motion information from the first video data the second video data including the detected false contour generation regions see for example column 12 lines 45- 55 and fig. 14 wherein the comparator 410a which compares bit data in the n-th frame with bit data in the (n+1)th frame, and outputs "+1" for any bit in the bit data that changed from ON to OFF (comparing and outputting steps corresponding to extracting motion information); setting a compensation value based on the velocity value from the motion information see for example column 16 lines 50- 55 wherein compensation is based on the moving speed and column 36 lines 45- 50 wherein reducing of halftone disturbance (corresponding to compensation) is made for moving images at various speeds and directions; adding or subtracting the compensation value to or from a gray scale (adjusting gray scale) that has generated the false contour depending on a direction (e.g., column 36 lines 45- 50 for the various

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direction and fig. 26- 31b) from the motion information see for example fig. 23 and column 23 lines 8- 15 wherein motion compensation equalizing (addition and subtraction) and luminance blocks which are used to display gray scale level of a pixel are used.

However, Mikoshiba does not teach setting the compensation value based on a size of the gray scale, wherein the gray scale is added or subtracted is any one of adjacent gray scales that generates a false contour generation region.

Okamoto et al teaches setting the compensation value based on a size of the gray scale (steps s4- s5 corresponding compensation according to the size of the gradation variation), wherein the gray scale is added or subtracted (broadly corresponding to compensation of pixel adjacent to each other) is any one of adjacent gray scales that generates a false contour generation region see for example the abstract.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Okomoto et al into Mikoshiba to have compensation value based on the size of the gray scale and therefore affect the gradation variations by accurate detection resulting into accurate compensation of the false contour and high quality animation production on display see for example the abstract.

As per claims 5 and 31 Mikoshiba teaches the first video data of the previous frame period is stored such that the first video data is delayed during one frame period by a frame memory see for example fig. 14 and column 12 line 39.

As per claims 9 and 32 Mikoshiba teaches the false contour is generated when a gray scale having a combination of a plurality of sub-fields is any one of 16, 32, 64 and 128 see for example fig. 1 and 19.

As per claims 10 and 33 Mikoshiba teaches matching the first video data of the previous frame period with the second video data of the current frame period see for example column 12 lines 45- 55 for the equalization through comparison performed in fig. 14 corresponding to matching between successive frames; and extracting (corresponding to determination through comparison) the motion information from a change of the movement between the false contour generation region of the first video data and second false contour generation region of the second video data see for example column 12 lines 45- 55 and fig. 14 wherein the comparator 410a which compares bit data in the n-th frame with bit data in the (n+1)th frame, and outputs "+1" for any bit in the bit data that changed from ON to OFF (comparing and outputting steps corresponding to extracting motion information).

As per claims 11 and 34 Mikoshiba teaches size (corresponding to increase from left to the right of the screen in column 9 line 25 and also the increase to 256 scale in column 11 line 42), direction and velocity value (corresponding to speed) of a gray scale see for example column 9 lines 20- 35.

### ***Response to Arguments***

Applicant's arguments with respect to claims 4-5,9-11,28,31-34 have been considered but are moot in view of the new ground(s) of rejection.

As per applicant's remarks on page 7 applicant recites Mikoshiba does not teach "detecting each false contour generation regions from first video data for a previous frame period and a second video data for a current frame period in combination with extracting a motion information from the first video data the second video data including the detected false contour generation regions".

Examiner respectfully disagrees.

Examiner points out to "detecting each false contour generation regions from first video data for a previous frame period and a second video data for a current frame period see for example fig. 15 to 18 B and column 15 lines 60- 67 for the false contour compensation between two successive frames (corresponding to first and second video data) and extracting a motion information from the first video data the second video data including the detected false contour generation regions see for example column 12 lines 45- 55 and fig. 14 wherein the comparator 410a which compares bit data in the n-th frame with bit data in the (n+1)th frame, and outputs "+1" for any bit in the bit data that changed from ON to OFF (comparing and outputting steps corresponding to extracting motion information). Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

### **Inquiry**

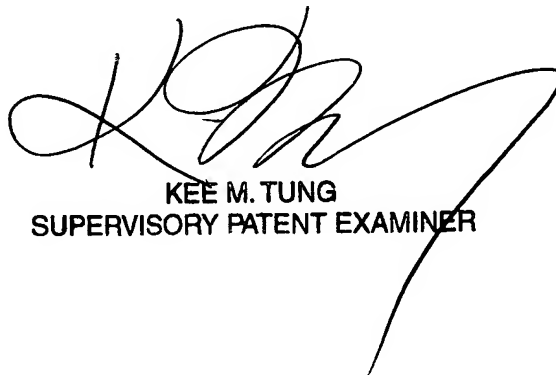
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

October 11, 2006



KEE M. TUNG  
SUPERVISORY PATENT EXAMINER